

## Management of diabetic Patient Trans tibial amputee with the polypropylene technology

and similar papers at [core.ac.uk](http://core.ac.uk)

Niigata University of Health and Welfare  
Field of Prosthetics, Orthotics & Assistive Technology  
Akouetevi Aduayom-Ahego, Yoshihiro Ehara,

### 【Background】

Generally due to lack of orthopedic material in the rural part of Togo, the amputees were fitted with wooden socket and foot. In a rural environment where most of the populations are farmers, due to agricultural conditions in which the prosthetic foot is always in contact with water, the usage time of the prosthesis is shorter than usual. To overcome the difficulties the patient faces, the polypropylene technology was used that will last longer and can be adapted to the working environment.

### 【Methods】

The patient is assessed, a prescription is made, measurements are taken and molding and rectification are performed according to best prosthetic and orthotic practice. The International Committee of Red Cross polypropylene technology<sup>1)</sup> was the material used in manufacturing the prosthesis. The socket was made with molded polypropylene and soft liner made with EVA.

Shank Module was as follows (Fig.1):

- 1-Convex ankle
- 2-Two concave cylinders
- 3-Convex disc
- 4-Cylindrical Trans tibial cup
- 5-Flat steel washer and countersunk head bolt

The Solid Ankle Cushion Heel foot was used instead of the wooden foot. (Fig.2)

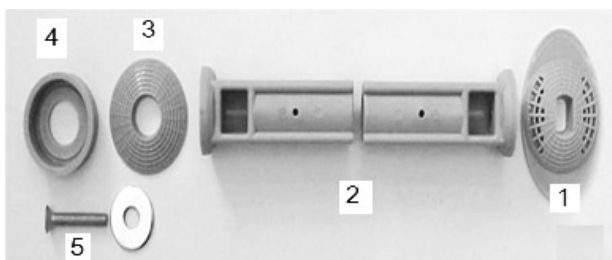


Fig.1: Shank module



Fig.2: Solid Ankle Cushion Heel Foot



Fig.3: Patient doing loading and balance exercise during fitting.

### 【Results】

After the dynamic alignment and various exercises were performed according to different environments conditions, then the finishing of the prosthesis was proceeded (Fig. 3). The polypropylene type is quite faster and can benefit time for the technician compares to the wooden type which takes time in manufacturing and will last not more than three years for the patient.

### 【Discussion】

Though the polypropylene technology may be quite expensive than the wooden type, patient fitted with polypropylene material prosthesis adapts well in the social environment as well as in his working environment. However, many new technologies continue to rely on methods and resources that still require a fully operational prosthetic clinic. They do not overcome the barriers associated with unstable electricity nor do they meet the needs in rural communities where many people with limb amputations live.

### 【Conclusion】

The prosthesis allows the patient to be independent and takes care of his daily activities. Although the innovation rehabilitation goal was achieved, better improvement is possible with new technology approach.

### 【References】

- 1) International Committee of the Red Cross, Trans tibial prosthesis manufacturing guideline, physical rehabilitation programme 2006, 2-3.